

Claims:

1. 1. A system for a magnetic head arm assembly (HAA) comprising:
 2. a first component having a first cavity to be coupled to an arm portion having an arm cavity via a pin element welded between said first component and said arm portion, wherein
 3. said first component is selected from the group consisting of a head suspension portion and a flex cable portion.
1. 2. The system of claim 1, wherein said head suspension portion is a hard disk drive head gimbal assembly (HGA).
1. 3. The system of claim 1, wherein said flex cable portion is a hard disk drive flex cable.
1. 4. The system of claim 1, wherein said arm portion is a hard disk drive arm.
1. 5. The system of claim 1, wherein said pin element is a copper welding pin.
1. 6. The system of claim 1, wherein said pin element is inserted into said first cavity and into said arm cavity and said pin element to couple said first component to said arm portion.
1. 7. The system of claim 6, wherein said pin element is cylindrical; said first cavity is a circular hole with a diameter enabling insertion of said pin element; and said arm cavity is a circular recession with a diameter enabling insertion of said pin element.

1 8. The system of claim 6, wherein said pin element has a rectangular cross-section; said first
2 cavity is a rectangular opening with a size enabling insertion of said pin element; and said arm
3 cavity is a rectangular recession with a size enabling insertion of said pin element.

1 9. The system of claim 6, wherein said pin element is interference fitted into said arm cavity
2 and said pin element is soldered to first component to couple said first component to said arm
3 portion.

1 10. A method for a magnetic head arm assembly (HAA) comprising:
2 coupling a first component having a first cavity to an arm portion having an arm cavity
3 via a pin element welded between said first component and said arm portion, wherein
4 said first component is selected from the group consisting of a head suspension portion
5 and a flex cable portion.

1 11. The method of claim 10, wherein said head suspension portion is a hard disk drive head
2 gimbal assembly (HGA).

1 12. The method of claim 10, wherein said flex cable portion is a hard disk drive flex cable.

1 13. The method of claim 10, wherein said arm portion is a hard disk drive arm.

1 14. The method of claim 10, wherein said pin element is a copper welding pin.

1 15. The method of claim 10, wherein said pin element is inserted into said first cavity and
2 into said arm cavity and said pin element to couple said first component to said arm portion.

1 16. The method of claim 15, wherein said pin element is cylindrical; said first cavity is a
2 circular hole with a diameter enabling insertion of said pin element; and said arm cavity is a
3 circular recession with a diameter enabling insertion of said pin element.

1 17. The method of claim 15, wherein said pin element has a rectangular cross-section; said
2 first cavity is a rectangular opening with a size enabling insertion of said pin element; and said
3 arm cavity is a rectangular recession with a size enabling insertion of said pin element.

1 18. The method of claim 15, wherein said pin element is interference fitted into said arm
2 cavity and said pin element is soldered to first component to couple said first component to said
3 arm portion.

1 19. A system for a magnetic head arm assembly (HAA) comprising:
2 a first component to be coupled to a second component via welding said first component
3 to said second component, wherein
4 said first component is selected from the group consisting of a head suspension portion, a
5 flex cable portion, and a flex circuit portion.
6 said second component is an arm portion.

1 20. The system of claim 19, wherein said first component is a hard disk drive slider frame
2 and said second component is selected from a group consisting of a hard disk drive head gimbal
3 assembly (HGA) and a hard disk drive slider.

1 21. The system of claim 19, wherein said head suspension portion is a hard disk drive head
2 gimbal assembly (HGA).

1 22. The system of claim 19, wherein said flex cable portion is a hard disk drive flex cable.

1 23. The system of claim 19, wherein said flex circuit portion is a hard disk drive bridge flex
2 circuit (BFC).

1 24. The system of claim 19, wherein said arm portion is a hard disk drive arm.

1 25. The system of claim 19, wherein said first component is coupled to said second
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder
3 bump welding, and laser welding.

1 26. The system of claim 20, wherein said first component is coupled to said second
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder
3 bump welding, and laser welding.

1 27. A method for a magnetic head arm assembly (HAA) comprising:
2 welding a first component to a second component, wherein
3 said first component is selected from the group consisting of a head suspension portion, a
4 flex cable portion, and a flex circuit portion.
5 said second component is an arm portion.

1 28. The method of claim 27, wherein said first component is a hard disk drive slider frame
2 and said second component is selected from a group consisting of a hard disk drive head gimbal
3 assembly (HGA) and a hard disk drive slider.

1 29. The method of claim 27, wherein said head suspension portion is a hard disk drive head
2 gimbal assembly (HGA).

1 30. The method of claim 27, wherein said flex cable portion is a hard disk drive flex cable,
2 said flex circuit portion is a hard disk drive bridge flex circuit (BFC), and said arm portion is a
3 hard disk drive arm.

1 31. The method of claim 27, wherein said first component is coupled to said second
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder
3 bump welding, and laser welding.

1 32. The method of claim 28, wherein said first component is coupled to said second
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder
3 bump welding, and laser welding.